

What is claimed is

5 1. A method of transmitting, via a synchronous digital  
transport network, a frame-structured synchronous  
multiplex signal, composed of frames having a payload  
section and an overhead section, in the payload  
section of which multiplex units are multiplexed  
10 according to a multiplex hierarchy, comprising the  
step of transmitting a frame to be transmitted,  
including its unchanged overhead section, as payload  
in a concatenation of newly formed multiplex units.

15 2. A method according to Claim 1 further comprising the  
steps of:  
- creating a number of new multiplex units of the  
same size, and concatenating these new multiplex  
units to form a virtual concatenation,  
20 - packing the frame, including the overhead section  
thereof, in payload sections of the concatenated  
new multiplex units,  
- creating at least one new frame and embedding the  
concatenated new multiplex units in the payload  
25 section thereof, and  
- transmitting the at least one new frame via the  
synchronous transport network.

3. A method according to Claim 1, wherein the synchronous  
30 transport network is a SDH network, wherein the frames  
are synchronous transport modules of the type STM-N  
where N = 1, 4, 16 or 64, wherein the multiplex units  
are virtual containers of the type VC-N where N = 11,  
12, 2, 3, or 4 or contiguously concatenated virtual  
35 containers of the type VC-4-Nc where N = 4 or 16, and  
wherein the newly formed multiplex units are virtual  
containers of the type VC-N where N = 3 or 4.

09863317.052404

4. A method according to Claim 1 wherein, in a first of  
the newly formed multiplex units, the overhead section of a  
frame to be transmitted and path overheads of the multiplex  
5 units contained in the payload section of this frame are  
combined, and wherein one of the multiplex units from the  
payload section of this transport frame without the path  
overhead thereof is inserted into each of the remaining  
newly formed multiplex units of the concatenation.

10

5. A method according to Claim 1, wherein a frame of the  
type STM-1, OC-3 or OC-3-3c is transported via two  
virtually concatenated virtual containers of the type VC-4  
or via four virtually concatenated virtual containers of  
15 the type VC-3.

6. A method according to Claim 1, wherein a frame of the  
type STM-4, OC-12 or OC-3-12c is transported via five  
virtually concatenated virtual containers of the type VC-4  
20 or thirteen virtually concatenated virtual containers of  
the type VC-3.

7. A method according to Claim 1, wherein a frame of the  
type STM-16, OC-48 or OC-3-48c is transported via seventeen  
25 virtually concatenated virtual containers of the type VC-4  
or via fifty one virtually concatenated virtual containers  
of the type VC-3.

8. A method according to Claim 1, wherein a frame of the  
30 type STM-64, OC-192 or OC-3-192c is transported via sixty  
eight virtually concatenated virtual containers of the type  
VC-4.

1011250-120093602

9. A multiplexer for a synchronous digital transport network comprising:

- at least one tributary input for receiving a first frame-structured synchronous multiplex signal being composed of first frames each having a payload section and an overhead section, in the payload sections of which multiplex units are inserted in accordance with a multiplex hierarchy,
- a multiplex device, connected to the tributary input, for creating new multiplex units, for concatenating the newly formed multiplex units to form a concatenation, and for packing a received frame, including the unchanged overhead sections thereof, as payload in the concatenation of the newly formed multiplex units, and
- at least one output for creating and transmitting a second, frame-structured synchronous multiplex signal composed of second frames in whose payload sections the concatenated, newly formed multiplex units are inserted.

10. A multiplexer according to Claim 9 comprising a switching matrix for selectively switching of multiplex units, wherein the multiplex device is connected to a matrix input and the output is connected to a matrix output.

15  
20  
25

00000000000000000000000000000000